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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,073	11/14/2003	Yiming Huai	40205-6231	2624

7590 04/25/2005

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EXAMINER

LE, THONG QUOC

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,073

Applicant(s)

HUAI ET AL.

Examiner

Thong Q. Le

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-31 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 6, 7 and 9-12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/17/04</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Claims 1-31 are presented for examination.

Information Disclosure Statement

2. This office acknowledges receipt of the following items from the Applicant:
Information Disclosure Statement (IDS) filed on 05/17/2004.
3. Information disclosed and list on PTO 1449 was considered.

Specification

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

5. Regarding claims 2-15, line 1, should be changed "A magnetic memory" to –The magnetic memory--.
6. Regarding claims 17-21, line 1, should be changed "An array" to –The array--.
7. Regarding claims 23-25, 27-31, line 1, should be changed "A method" to –The method--.
8. Regarding claim 8, line 1, should be change "**claim 8**" to –claim 7--.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. Claims 1-5,8,13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Covington (Pub. U.S. Patent No. 2004/0061981).

Regarding claim 1, Covington discloses a magnetic memory device (Figure 7), comprising:

at least three terminals including first, second, and third terminals (Figure 7) ,
a spin transfer (ST) driven element including a first free layer (62), the ST driven element disposed between the first terminal and the second terminal (Figure 7); and
a readout element including a second free layer (66) , the readout element disposed between the second terminal and the third terminal (Figure 7), wherein a magnetization direction of the second free layer in the readout element indicates a data state, and wherein a magnetization reversal of the first free layer within the ST driven element magnetostatically causes a magnetization reversal of the second free layer in the readout element, thereby recording the data state [0040-0041].

Regarding claims 2-5,8,13-15, Covington discloses a wherein the ST driven element includes a spin valve (SV) [0040], and wherein the SV is a current perpendicular to the plane (CPP) spin valve (Figures 6), and wherein the spin valve comprises an anti-ferromagnetic (AFM) layer; a pinned layer; a conductor layer; and the first free layer [0044], and wherein the pinned layer is synthetic and includes: a first pinned sub-layer; a second pinned sub-layer; a Ru layer sandwiched between the first and second pinned sub-layers, wherein the Ru layer promotes anti-ferromagnetic exchange coupling between the first and second pinned sub-layers [0029-0030], and wherein the readout element includes a magnetic tunnel junction (MTJ), and wherein the MTJ comprises: an anti-ferromagnetic (AFM) layer; a pinned layer; an insulating barrier layer; and the second free layer.

Allowable Subject Matter

11. Claims 6-7,9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6-7, 9-12 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Covington (Pub. U.S. Patent No. 2004/0061981), and others, does not teach the claimed invention having a spin transfer driven element includes a dual spin valve.

12. Claims 16-31 are allowed.

Claims 16-31 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Covington (Pub. U.S. Patent No. 2004/0061981), and others, does not teach the claimed invention having at least one isolation circuitry configured to select a desired magnetic memory element within the array, and to isolate the insulating barrier layer during a write operation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Le whose telephone number is 571-272-1783. The examiner can normally be reached on 8:00am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoai V. Ho can be reached on 571-272-1777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thong Q. Le
Primary Examiner
Art Unit 2827

THONG LEI
PRIMARY EXAMINER